

CLAIMS

5 The embodiments of the invention in which an exclusive property or
privilege is claimed are defined as follows:

1. An optical inspection machine for fasteners, comprising:

(a) an inspection station;

10 (b) a main dial rotatable through said inspection station and carrying
thereon a plurality of fasteners;

(c) a reflective surface surrounding each of said plurality of fasteners to
permit inspection light to reflect from said reflective surface and permit viewing
of an entire outer circumference of a head of said each of said plurality of
fasteners to detect head cracks and bursts; and

15 (d) a lower surface of said each of said plurality of fasteners being raised
above said reflective surface.

2. An optical inspection machine for fasteners, as defined in Claim 1,
further comprising: masks affixed to upper surfaces of said main dial and to a
20 stationary in-line guide at said inspection station and surrounding said reflective
surface.

3. An optical inspection machine for fasteners, as defined in Claim 2,
wherein: said masks are spaced apart from said outer circumference by a
25 minimum of about 0.100-inch.

4. An optical inspection machine for fasteners, as defined in Claim 1,
wherein: each of said plurality of fasteners is raised above said reflective surface
by about 0.090-inch.

5. An optical inspection machine for fasteners, as defined in Claim 1, wherein each of said plurality of fasteners is raised above said reflective surface by a land having a width dimension at least about 20 percent less than a corresponding width dimension of a head of said fastener.

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6. An optical inspection machine for fasteners, as defined in Claim 2, further comprising: a reflective guide plate affixed to an undersurface of said in-line guide to reflect inspection light past a portion of a head of each of said plurality of fasteners.

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7. An optical inspection machine for fasteners, as defined in Claim 6, wherein: said reflective guide plate underlies said main dial by a minimum of about 0.060-inch.

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8. A method of optically inspecting fasteners, comprising:

(a) providing an inspection station;

(b) providing a main dial rotatable through said inspection station and carrying thereon a plurality of fasteners;

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(c) providing a reflective surface surrounding each of said plurality of fasteners to permit inspection light to reflect from said reflective surface and permit viewing of an entire outer circumference of a head of each of said plurality of fasteners to detect head cracks and bursts; and

(d) raising a lower surface of said each of said plurality of fasteners above said reflective surface.

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9. A method of optically inspecting fasteners, as defined in Claim 8, further comprising: affixing masks to upper surfaces of said main dial and to a stationary in-line guide at said inspection station and surrounding said reflective surface.

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10. A method of optically inspecting fasteners, as defined in Claim 9, further comprising: spacing said masks apart from said outer circumference by a minimum of about 0.100-inch.

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11. A method of optically inspecting fasteners, as defined in Claim 8, further comprising: raising each of said plurality of fasteners above said reflective surface by about 0.090-inch.

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12. A method of optically inspecting fasteners, as defined in Claim 8, further comprising: raising each said plurality of fasteners above said reflective surface with a land having a width dimension at least about 20 percent less than a corresponding width dimension of a head of said fastener.

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13. A method of optically inspecting fasteners, as defined in Claim 9, further comprising: affixing a reflective guide plate to an undersurface of said in-line guide to reflect inspection light past a portion of a head of each of said plurality of fasteners.

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14. A method of optically inspecting fasteners, as defined in Claim 13, further comprising: placing said reflective guide plate under said main dial by a minimum of about 0.060-inch.